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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/378,227	08/19/1999	TERENCE S. DOWLING	07844/322001	8868

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EXAMINER

BELL, PAUL A

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/378,227

Applicant(s)

DOWLING ET AL.

Examiner

PAUL A BELL

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-60 and 62-72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-45 and 49-51 is/are allowed.
- 6) ☒ Claim(s) 1,3-6,10-16,46-48,52-60,62-64,66,69,71 and 72 is/are rejected.
- 7) ☒ Claim(s) 2,7-9,65,67,68 and 70 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

#### Claim Rejection's - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6, 11-16, 52, 56- 60 and 62-64, 66, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumada et al. (5,563,725) in view of Engeldrum (5,638,117)

With regard to claim 1, Kumada et al. teaches a display system operable to display each of a plurality of pixels at a visual output intensity relative to an output display device according to a corresponding pixel input value, a method for determining device-specific information for pixels to obtain an optimal display of images on an output display device, the input display device having one or more color planes (abstract, figures 24 and 26, column 2, lines 58-63, column 10, lines 8-24, lines 54-67) the method comprising determining a set of device-specific pixel input values, based on user input, (figure 26 items 140, 104 and 104f, figures 32a, 32b, 33a, and 33b, figure 43, figure 52, items 140, 143, and 104f and all associated text teach user inputting monitor type ) that will cause the display system to display a corresponding set of target visual output intensities relative to the output display device (column 29, lines 12-34 and column 30, lines 9-40).

Kumada et al. does not illustrate, "the determining step including displaying, a control region and a reference region on the output display device, the control region being defined by a plurality of control pixels, each of the control pixels having a common pixel input value,

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evaluating the control region and reference region for each color plane of the display device, and adjusting the common pixel input value for the control pixels until a match is achieved between an appearance of the reference region and an appearance of the control region for each color plane, such that the target visual output intensities are achieved.”

Engeldrum et al. illustrates in a calibration procedure for displays like Kumada et al., the above missing limitations in abstract, column 1, lines 5-13, lines 29-32, lines 53-60 and column 2, lines 38-67 and column 3, lines 1-25 and figures 2-4 .

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Kumada et al. system to use his display the display calibration procedure as taught by Engeldrum because he gives motivation in column 1, lines 29-32.

With regard to claim 3 the combination of Kumada et al. and Engeldrum et al. was found above in claim 1 to teach most of the limitations of claim 3 in addition the combination also teaches “and associating the common pixel input value with the target visual output intensity when a user input indicates a match between the appearance of the reference region and the appearance of the control region” (SEE Engeldrum et al. column 2, lines 29-37).

With regard to claim 4 the combination of Kumada et al. and Engeldrum et al. teaches the method of claim 3, wherein the target visual output intensity is obtained from user input (SEE Engeldrum et al. column 2, lines 29-37)..

With regard to claim 5 the combination of Kumada et al. and Engeldrum et al. teaches the method of claim 3, wherein the numeric value defining the size of the set of pixel input values is obtained from user input (SEE Engeldrum et al. column 2, lines 29-37 when the user

picks a match it would have been obvious that there was a numeric value in memory assigned to the color at that intensity ).

With regard to claim 6 the combination of Kumada et al. and Engeldrum et al. teaches the method of claim 3, wherein the numeric value defining the size of the set of pixel input values is a pre-programmed numeric value (SEE Engeldrum et al. figures 3 and 4 where it is inherent that the boxes illustrated have is a pre-programmed numeric value .)

With regard to claim 11 the combination of Kumada et al. and Engeldrum et al. teaches wherein the output display device is a color output display devices and monochrome output display devices (See Kumada et al. abstract).

With regard to claim 12 the combination of Kumada et al. and Engeldrum et al. teaches the method of claim 3, further including locating the reference region and the control region in close proximity to each other (SEE Engeldrum et al. figures 3-4).

With regard to claim 13 the combination of Kumada et al. and Engeldrum et al. teaches the method of claim 3, wherein the number of pixels defining the control region is substantially smaller than the number of pixels defining the reference region other (SEE Engeldrum et al. figures 3-4).

With regard to claim 14 the combination of Kumada et al. and Engeldrum et al. teaches the method of claim 3, wherein the reference region encloses the control region (SEE Engeldrum et al. figures 3-4)

With regard to claim 15 the combination of Kumada et al. and Engeldrum et al. teaches the method of claim 3, wherein the reference region and the control region are side-by-side(SEE Engeldrum et al. figures 3-4).

With regard to claim 16 the combination of Kumada et al. and Engeldrum et al. teaches the method of claim 3, further including evaluating a control region and reference region for each color plane of the display device and adjusting the common pixel input value to achieve a match between the appearance of the reference region and the appearance of the control region for each color plane (SEE Engeldrum et al. figures 3-4).

With regard to claim 52 the combination of Kumada et al. and Engeldrum teaches wherein the determining step further includes displaying a reference region on the output display device, the reference region being defined by a plurality of reference pixels, the displaying step including selecting a pixel input value for each of the reference pixels to produce a target visual intensity (See Engeldrum figures 3 and 4).

With regard to claim 57 the combination of Kumada et al. and Engeldrum et al. teaches further including locating the reference region and the control region in close proximity to each other (See Engeldrum figures 3 and 4).

With regard to claim 58 the combination of Kumada et al. and Engeldrum et al. teaches 58 the method of claim 52, wherein the number of pixels defining the control region is substantially smaller than the number of pixels defining the reference region (See Engeldrum figures 3 and 4).

With regard to claim 59 the combination of Kumada et al. and Engeldrum et al. teaches the method of claim 52, wherein the reference region encloses the control region (See Engeldrum figures 3 and 4).

With regard to claim 60 the combination of Kumada et al. and Engeldrum et al. teaches wherein the reference region and the control region are side-by-side (See Engeldrum figures 3 and 4).

With regard to claims 62 and 63 the combination of Kumada et al. and Engeldrum et al. teaches was shown above to cover all the limitations of 62 and 63.

With regard to claims 64, 66 and 72 the combination of Kumada et al., Engeldrum et al. was found above to teach most of the limitations of claims 64, 66 and 72 the applicant in addition is claiming a, "a computer program product, tangibly stored on a computer-readable medium" (Since Engeldrum shows the computer in figure 1 this feature would have been obvious)

3. Claims 46-48, 69, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kumada et al. and Engeldrum et al. applied to claims above, and further in view of Hill et al. (6,278,434).

With regard to claim 46 the combination of Kumada et al. and Engeldrum et al. was shown above in claims to read on most of the broad limitations of claim 46 and 49 in addition applicant is now claiming his display is a liquid crystal display (LCD). Kumada et al. specification does not narrow itself to a specific display type but is directed toward "a plurality of monitor types" (abstract) and therefore a LCD which is conventional is clearly suggested by Kumada as an obvious intended use of the Kumada et al. invention. As an example of a conventional "monitor type" Hill et al. teaches a color LCD display are exemplary of display devices which utilize multiple distinctly addressable elements, referred to herein as pixel sub-elements or pixel sub-components, to represent each pixel of an image being displayed (See Hill

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et al. column 2, lines 5-10) in which "color distortions such as color fringing is compensated by treating each pixel sub-component independently" (See Hill et al. abstract).

With regard to claims 47 the combination of Kumada et al. Engeldrum et al., And Hill et al. teaches "a sub-pixel position associated with a given pixel" (it is inherent that sub pixels have positions), and "sub-pixel has intensity" (it is inherent that each sub-pixel has an intensity or it would not work).

With regard to claims 48 the combination of Kumada et al., Engeldrum et al. and Hill et al 4 teach, wherein the liquid crystal display (LCD) device has a RGB color space (see Hill et al. Figure 2B).

With regard to claims 69 and 71 the combination of Kumada et al., Engeldrum et al. and Hill et al 4 was found above to teach most of the limitations of claims 69 and 71 the applicant in addition is claiming a "a computer program product, tangibly stored on a computer-readable medium" (Since Engeldrum shows the computer in figure 1 this feature would have been obvious)

4. Claims 10 and 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Kumada et al. (5,563,725) and Engeldrum et al.(5,638,117) as applied to claim 1 above and in further view of Simpson "MASTERING WORDPERFECT 5.1 & 5.2 FOR WINDOWS" (COPYRIGHT 1993).

With regard to claims 10 and 56 the combination of Kumada et al. and Engeldrum et al. does not illustrate a slider bar presented on a user interface so that based on user input, the common pixel input value may be adjusted between full on and full off, inclusive. However Simpson illustrates this to be a common well known interface (See Simpson figure 5.23 Spectrum).



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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination Kumada et al. and Engeldrum et al. system to use a slider bar as taught by Simpson because GUI's such as this provide a quick entry of data without typing.

***Allowable Subject Matter***

5. Claims 17-45, and 49-51 are allowed.

6. Claims 2, 7-9, 53-55, 65, 67, 68, 70 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: With regard to claims 17 and 49 none of the prior art of record teach or suggest "determining a device-specific **sub-pixel geometry** from a **plurality of possible sub-pixel geometries** in combination with all the other limitations of the claim as applicant illustrates in figure 6 "different pixel arrangements".

***Response to Arguments***

8. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

**Conclusion**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Bell whose telephone number is (703) 306-3019.

If attempts to reach the examiner by telephone are unsuccessful the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377 can help with any inquiry of a general nature or relating to the status of this application.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231


Or Faxed to: (703) 872-9306

Or Hand-delivered to: Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor

  
Paul Bell

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April 19, 2004

  
CHANH NGUYEN  
PRIMARY EXAMINER